coordinate input apparatus, generated on a predetermined two-dimensional coordinate surface with light emitted by a designation device which emits light in a predetermined blinking cycle and outputs detected coordinate data, said memory comprising:

program codes for a first detection step of detecting from the light spot, a light emission position in two-dimensional direction, by using a first photoreception sensor;

program codes for a second detection step of detecting from the light spot, time series variance of light emitted, by using a second photoreception sensor;

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program codes for a synchronization control step of synchronizing detection operation of the first photoreception sensor with the blinking cycle of light in the light spot based on the time series variance of the light spot detected by the second photoreception sensor; and

program codes for a calculation step of calculating coordinates of the position of the light spot, relative to said coordinate input apparatus, generated on the two-dimensional coordinate surface, based on a signal outputted from said first photoreception sensor brought to a synchronous slate by said synchronization control step.

REMARKS

I. Status Of The Claims

Claims 1-94 are pending in this application.

Claims 34, 47, 84, and 91 are objected to, "but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims".

Claims 1, 2, 4, 11, 12, 14, 21-23, 25, 35, 36, 38, 48-54, 56, 64-69, 71, 79-83, 85-90, and 92-94 are rejected under 35 U.S.C. 102(e) as being anticipated by Hall (U. S. Patent No. 5,703,623).

Claims 3, 5-10, 13, 15-20, 24, 26-33, 37, 39-46, 55, 57-63, 70, and 72-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hall in view of Isoguchi (U. S. Patent No. 5,146,353).

Claims 1, 11, 21, 22, 35, 48, 49, 64, 79, 80, 87, and 94 are independent.

II. Rejection of Claims 1-33, 35-46, 48-83, 85-90, and 92-94

The Examiner has rejected claims 1, 2, 4, 11, 12, 14, 21-23, 25, 35, 36, 38, 48-54, 56, 64-69, 71, 79-83, 85-90, and 92-94 under 35 U.S.C. 102(e) as being anticipated by Hall, and has rejected claims 3, 5-10, 13, 15-20, 24, 26-33, 37, 39-46, 55, 57-63, 70, and 72-78 under 35 U.S.C. 103(a) as being unpatentable over Hall in view of Isoguchi. The Applicant believes these claims, as originally filed, to be allowable over the cited references. Nevertheless, the Applicant amends various of these claims herewith to clarify wording.

The clamed invention relates to a coordinate input apparatus for inputting three-dimensional coordinates. This coordinate input apparatus receives via a plurality of sensors light emitted by a light emission unit of a designation device, determines a three-dimensional position where the light emission unit exists, and, based on a value obtained by the plurality of sensors, calculates the three-dimensional coordinates of a position where the designation device exists relative to the coordinate input apparatus.

According to the claimed invention, since the three-dimensional coordinates of a position where the designation device exists is calculated based on a position relationship between a position of the designation device and a position of the coordinate input device, the three-dimensional coordinates of a position where the designation device exists is obtained precisely.

Hall speaks of a handheld cursor control device incorporating piezoelectric sensors 34 on each of six surfaces with a mass 33 centered on each one, providing six degrees of freedom (X, Y, Z, yaw, pitch and roll) in three dimensions. The handheld cursor control device senses changes to its own position and orientation by sensing the amount the piezoelectric sensors 34 are pressed by the masses 33 in accordance with motion of the handheld cursor control device. The sensed information, including movement amount and movement direction of the handheld cursor control device, is transmitted to an external device such as a television.

However, the information sensed by the handheld cursor control device represents relative changes to its own position and orientation, and this information is merely transmitted to the external device. Therefore, since a position relationship between the external device and the handheld cursor control device is not considered for calculating the three-dimensional coordinates of the handheld cursor control device, Hall cannot calculate three-dimensional coordinates of the handheld cursor control device for the external device precisely.

Isoguchi discloses a still video camera having an electronic shutter of CCD, and a remote control switch box is used for remote control of the still video camera. Isoguchi fails to calculate three-dimensional coordinates of the remote control switch box.

In view of at least the foregoing, the Applicant submits that Hall and Isoguchi, taken together or individually, fail to disclose, teach, or suggest the claimed invention. The Applicant notes, for instance, that the references, taken together or individually, fail to disclose, teach, or suggest calculating the three-dimensional coordinates of a designation device by information sensed from a plurality of sensors wherein a position relationship of the designation device and a coordinate input device to be controlled by the designation device is taken into account.

CONCLUSION

The Applicant respectfully submits that this application is in condition for allowance for which action is earnestly solicited.

If a telephone conference would facilitate prosecution of this application in any way, the Examiner is invited to contact the undersigned at the number provided.

AUTHORIZATION

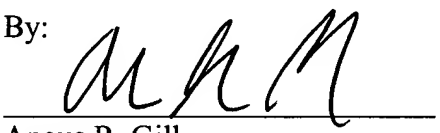
The Commissioner is hereby authorized to charge any additional fees which may be required for this amendment, or credit any overpayment to Deposit Account No. 13-4500, Order No. 1232-4573. **A DUPLICATE OF THIS DOCUMENT IS ATTACHED.**

Furthermore, in the event that an extension of time is required, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above-noted Deposit Account and Order No.

Respectfully submitted,

MORGAN & FINNEGAN, L.L.P.

Dated: September 18, 2002

By: 

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